

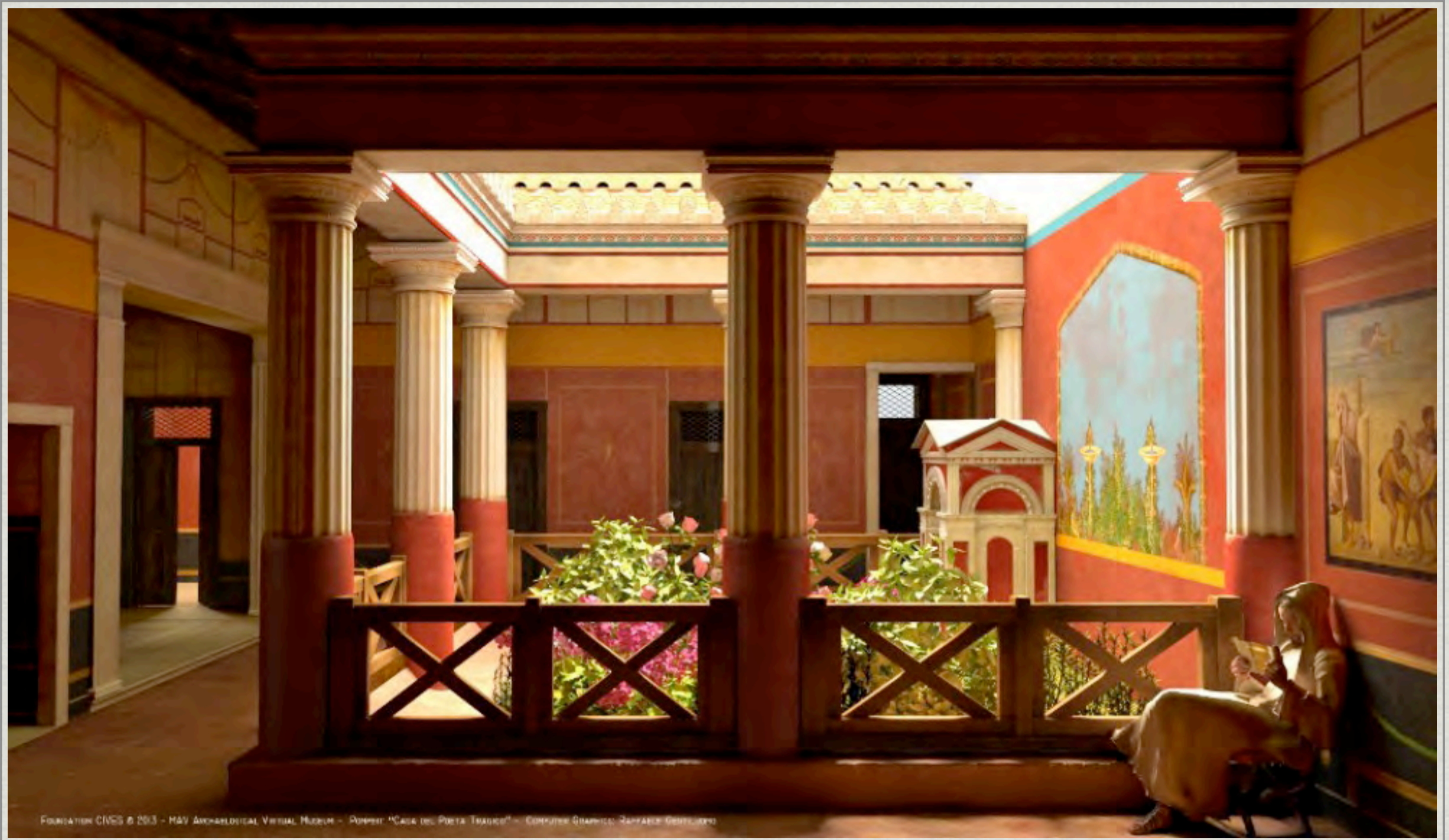


THE TEMPLE OF ISIS IN POMPEII, W. TURNER. TATE COLLECTION

An Ontology for 3D Visualisation of Cultural Heritage

Valeria Vitale, King's College London

MAIN ISSUE: 3D VISUALISATIONS TEND TO BE COMPLETELY OPAQUE



3D Visualisation of the House of the Tragic Poet in Pompeii. MAV, Herculaneum

IF YOU WERE IN A LIBRARY...



THE KING'S LIBRARY, ENGRAVING BY RICHARD REEVE AFTER A DRAWING BY JAMES STEPHANOFF.
COPYRIGHT GETTY

THE LONDON CHARTER: CALL FOR TRANSPARENCY

londoncharter

for the computer-based visualisation of cultural heritage



[HTTP://WWW.LONDONCHARTER.ORG/](http://www.londoncharter.org/)

PRINCIPLE 4

SUFFICIENT INFORMATION SHOULD BE DOCUMENTED AND DISSEMINATED TO ALLOW COMPUTER-BASED VISUALISATION METHODS AND OUTCOMES TO BE UNDERSTOOD AND EVALUATED IN RELATION TO THE CONTEXTS AND PURPOSES FOR WHICH THEY ARE DEPLOYED.

WHY THERE ARE NOT MANY DOCUMENTED 3D VISUALISATIONS?

DOCUMENTATION FOR 3D DIGITAL VISUALISATION IS:



- ❖ (*Really*) Long and time consuming
- ❖ Too verbose
- ❖ Not standardised
- ❖ Not easily searchable

THERE IS HOPE?

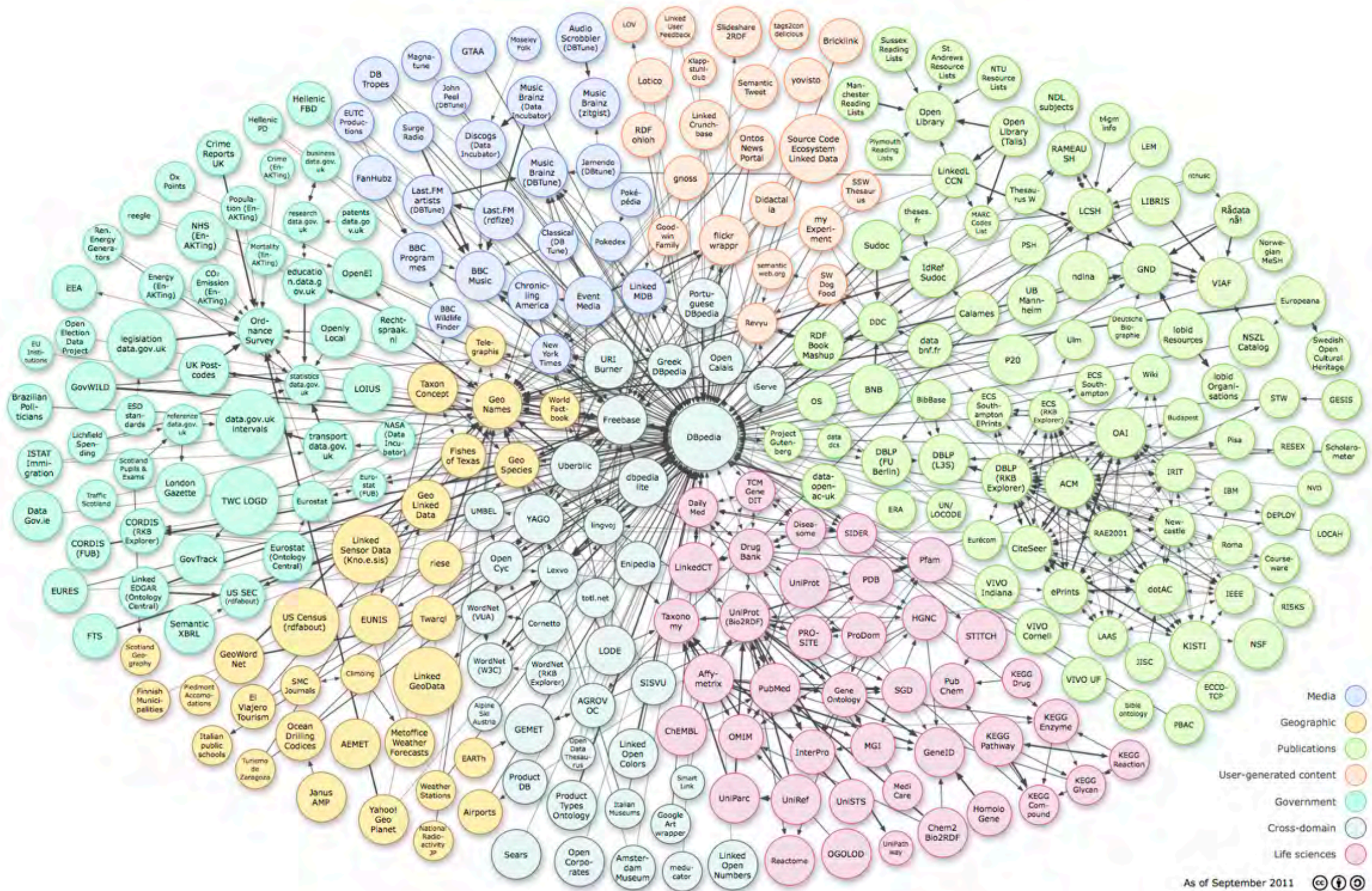
CAN WE THINK OF A FASTER,
NOT EXPENSIVE,
ACCESSIBLE, SEARCHABLE,
STANDARDISED WAY TO
EXPRESS INFORMATION
ABOUT THE VISUALISATION,
MAKING IT A PROPER PIECE
OF ACADEMIC RESEARCH?
CAN WE DESCRIBE THE
ELEMENTS OF THE MODEL,
THEIR RELATIONSHIPS WITH
THE ACTUAL REMAINS, THE
DOCUMENTS AND THE
LITERATURE?



ARCHIMEDES THOUGHTFUL, BY DOMENICO FETTI.

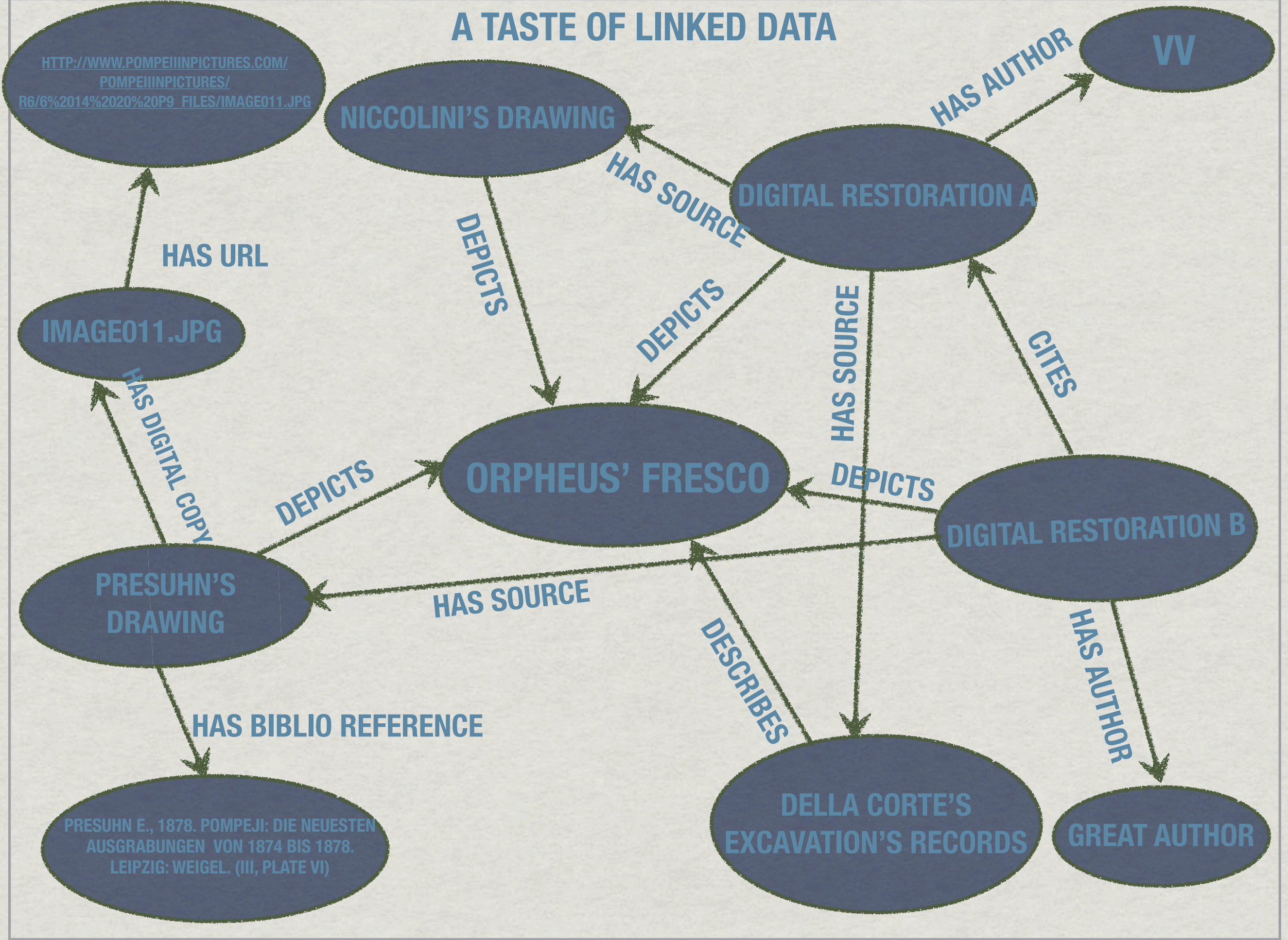
[HTTP://EN.WIKIPEDIA.ORG/WIKI/FILE:DOMENICO-FETTI_ARCHIMEDES_1620.JPG](http://en.wikipedia.org/wiki/File:Domenico-Fetti_Archimedes_1620.jpg)

LINKED DATA AS A POSSIBLE APPROACH



Instance linkages within the linking open data datasets. Source: wikipedia

A TASTE OF LINKED DATA



DO WE REALLY NEED A NEW ONE?

WHAT MAKES THIS NEW ONTOLOGY DIFFERENT FROM THE MANY OTHERS THAT ALREADY EXIST?



Second Hand Store, by Marc Fitzsimmons

- ✱ Not material object oriented,
- ✱ Not only qualities and relationships of the object (material or digital), but also the methodology used by the modellers and their interpretations of the available information.

S.C.O.T.C.H. : A COMMUNITY DEVELOPED ONTOLOGY

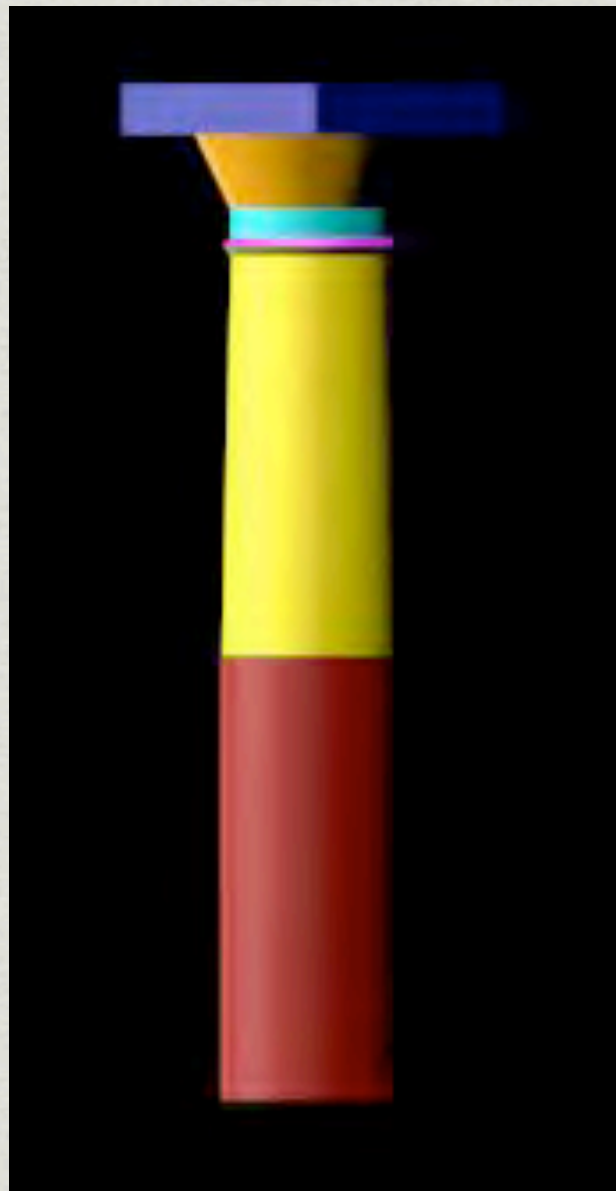
**SEMANTIC
COLLABORATIVE
ONTOLOGY FOR
THREE-D VISUALISATION OF
CULTURAL
HERITAGE**

BREAKING (VIRTUAL) REALITY INTO PIECES

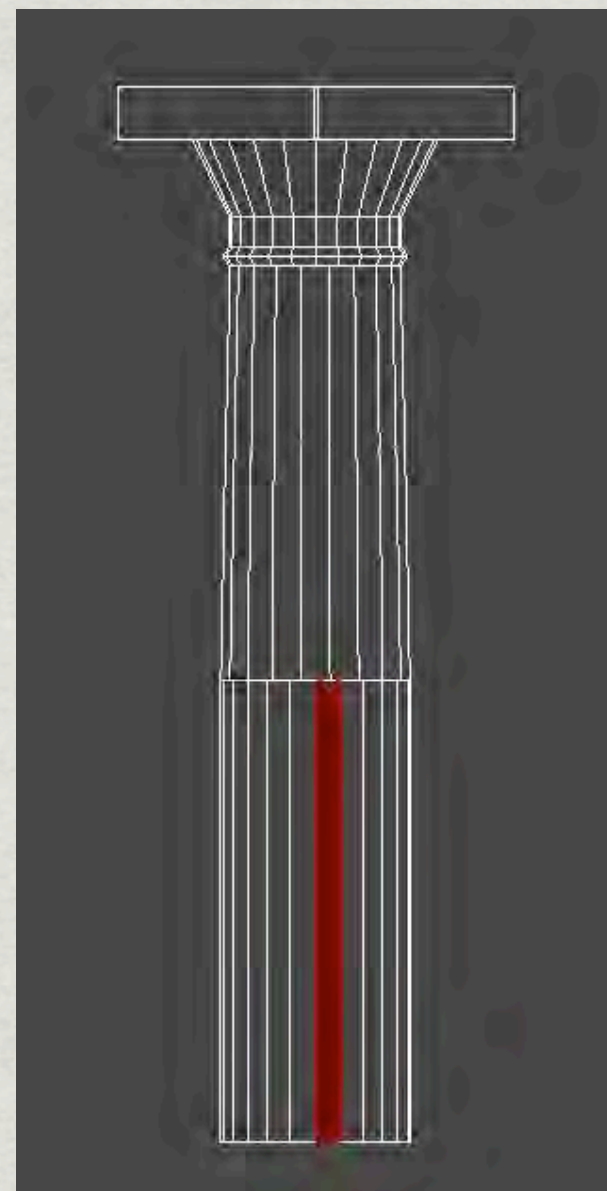
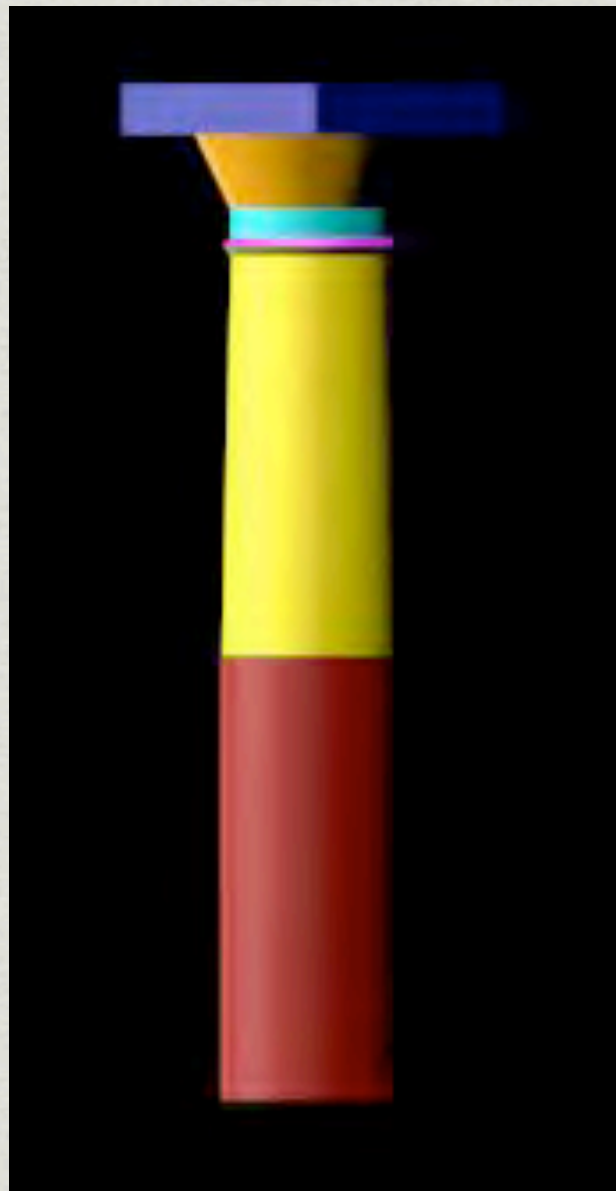
BREAKING (VIRTUAL) REALITY INTO PIECES



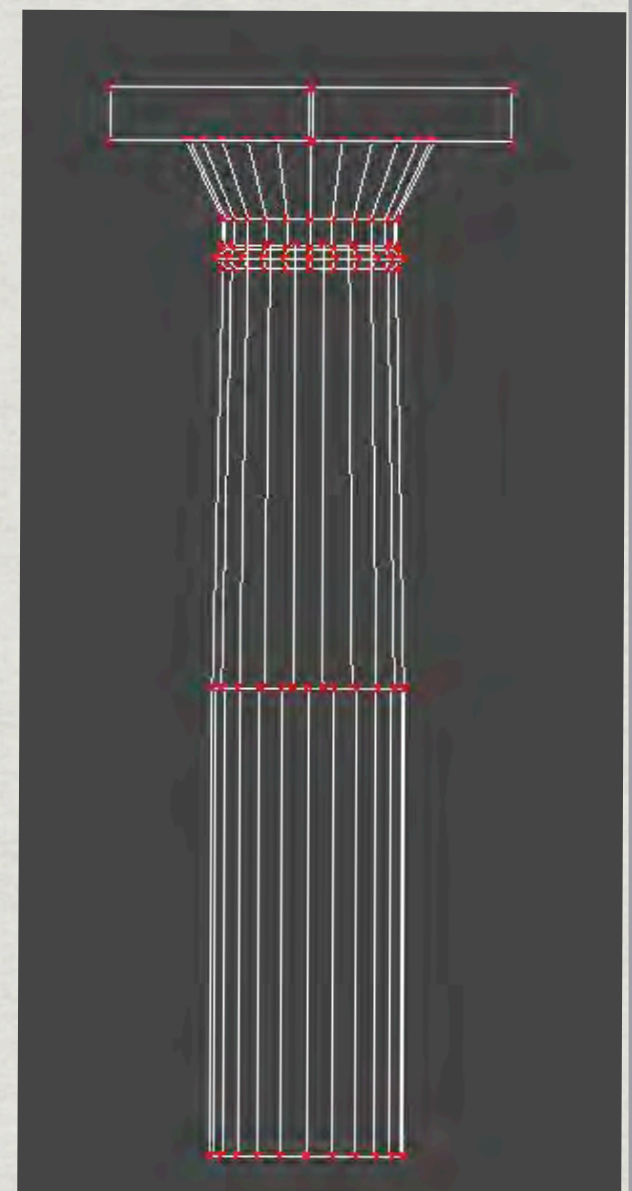
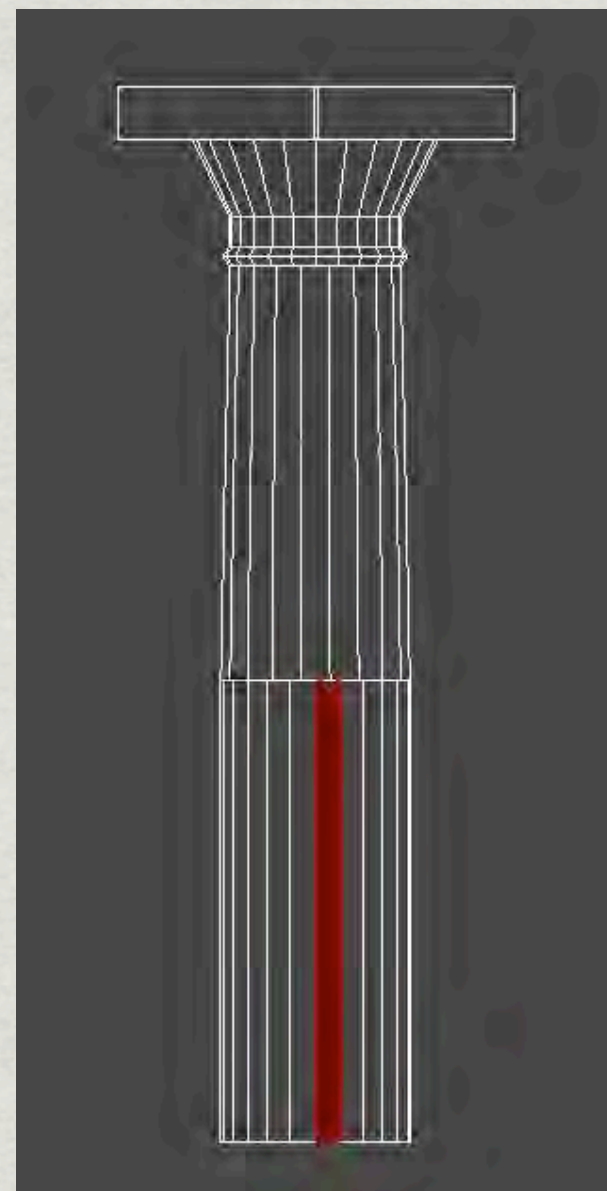
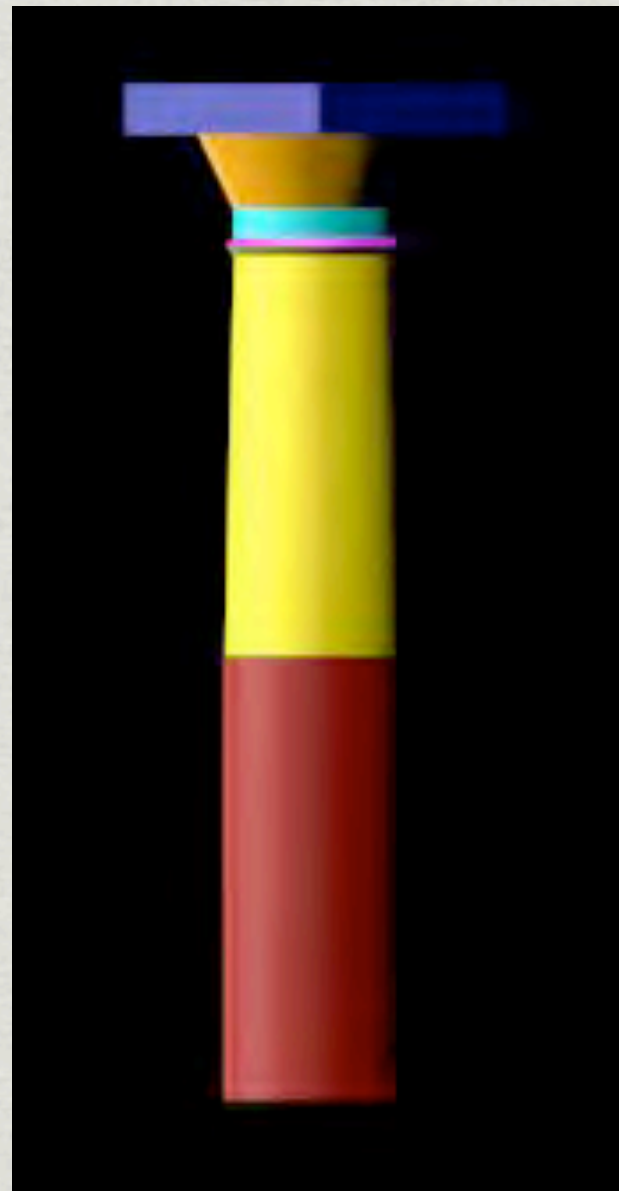
BREAKING (VIRTUAL) REALITY INTO PIECES



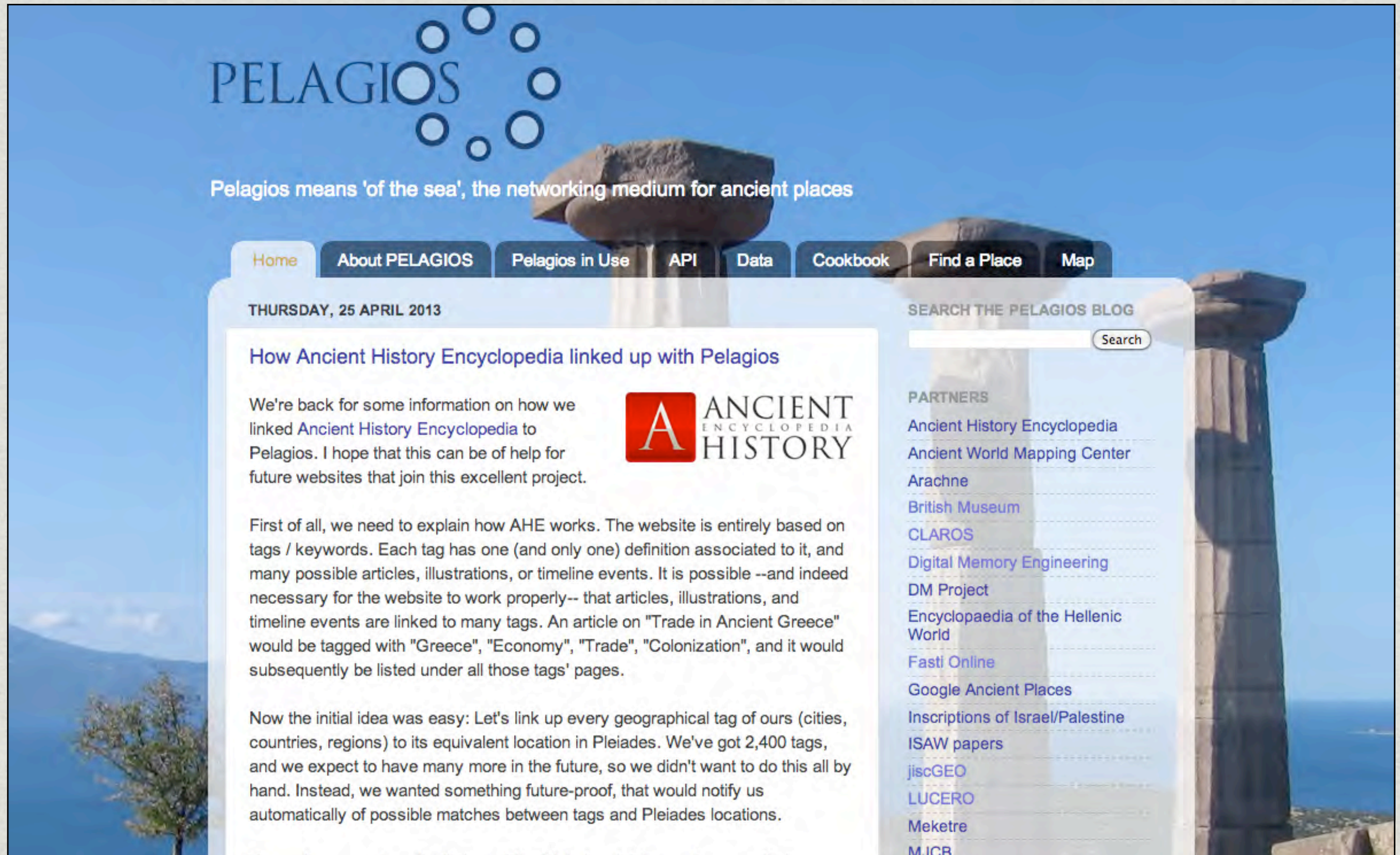
BREAKING (VIRTUAL) REALITY INTO PIECES



BREAKING (VIRTUAL) REALITY INTO PIECES



JOINING AND ENRICHING THE LINKED NETWORK OF DIGITAL RESOURCES TO STUDY THE PAST



PELAGIOS


Pelagios means 'of the sea', the networking medium for ancient places

[Home](#) [About PELAGIOS](#) [Pelagios in Use](#) [API](#) [Data](#) [Cookbook](#) [Find a Place](#) [Map](#)

THURSDAY, 25 APRIL 2013

How Ancient History Encyclopedia linked up with Pelagios

We're back for some information on how we linked [Ancient History Encyclopedia](#) to Pelagios. I hope that this can be of help for future websites that join this excellent project.



First of all, we need to explain how AHE works. The website is entirely based on tags / keywords. Each tag has one (and only one) definition associated to it, and many possible articles, illustrations, or timeline events. It is possible --and indeed necessary for the website to work properly-- that articles, illustrations, and timeline events are linked to many tags. An article on "Trade in Ancient Greece" would be tagged with "Greece", "Economy", "Trade", "Colonization", and it would subsequently be listed under all those tags' pages.

Now the initial idea was easy: Let's link up every geographical tag of ours (cities, countries, regions) to its equivalent location in Pleiades. We've got 2,400 tags, and we expect to have many more in the future, so we didn't want to do this all by hand. Instead, we wanted something future-proof, that would notify us automatically of possible matches between tags and Pleiades locations.

SEARCH THE PELAGIOS BLOG

Search

PARTNERS

- [Ancient History Encyclopedia](#)
- [Ancient World Mapping Center](#)
- [Arachne](#)
- [British Museum](#)
- [CLAROS](#)
- [Digital Memory Engineering](#)
- [DM Project](#)
- [Encyclopaedia of the Hellenic World](#)
- [Fasti Online](#)
- [Google Ancient Places](#)
- [Inscriptions of Israel/Palestine](#)
- [ISAW papers](#)
- [jiscGEO](#)
- [LUCERO](#)
- [Meketre](#)
- [MJCB](#)

[HTTP://PELAGIOS-PROJECT.BLOGSPOT.CO.UK/](http://pelagios-project.blogspot.co.uk/)

URIS FOR ANCIENT BUILDINGS

Site MapAccessibilityFeedbackHelpJoinLog In

PLEIADES

HomePlacesVocabsDocsHelpBlog

You are here: [Home](#) → [Ancient Places](#) → [Aphrodisias](#) → Odeon

Odeon

by [Tom Elliott](#) — last modified Dec 07, 2012 08:19 PM Copyright © The Contributors. Sharing and remixing permitted under terms of the Creative Commons Attribution 3.0 License (cc-by).

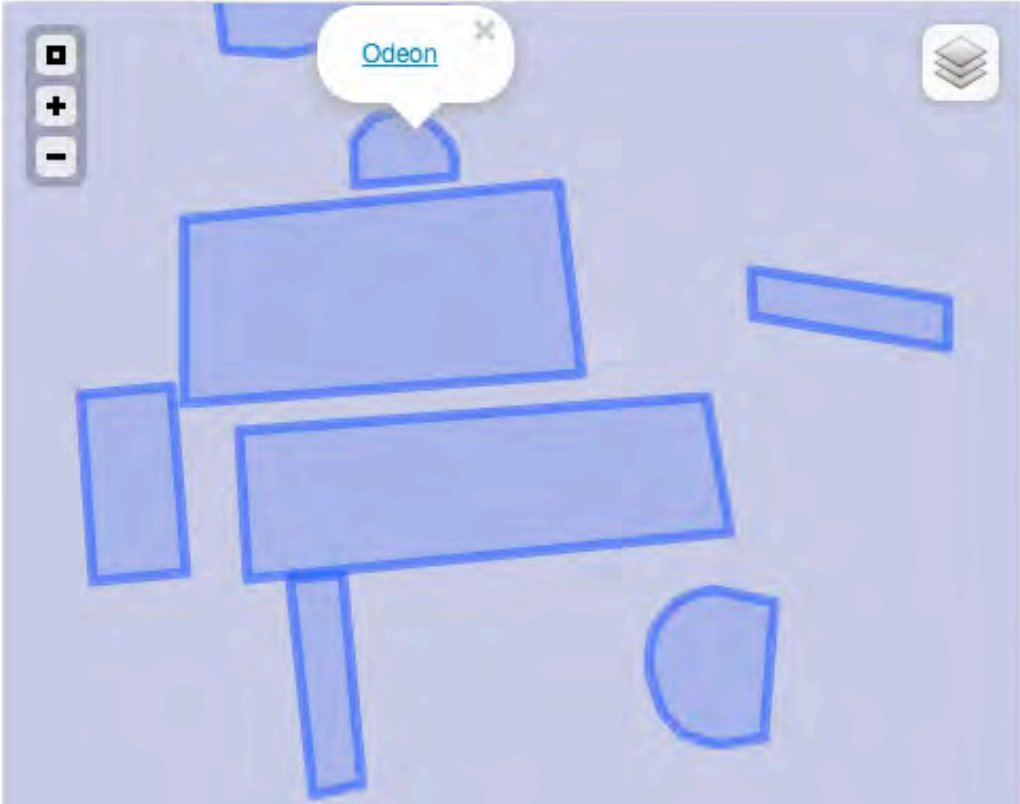
Description missing, please edit

Short Rating (1 votes): ★★

Feature type:
unknown

Geometry and coordinates (long, lat order):
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Association Certainty:
Certain



Search

[Advanced Search...](#)

Photos



Aphrodisias by Chris Ruggles.

[9 other related photos...](#)

Use this tag in Flickr to mark [depictions of this place's site\(s\)](#):

or this one to mark [objects found here](#):

[HTTP://PLEIADES.STOA.ORG/PLACES/638753/ODEON](http://pleiades.stoa.org/places/638753/odeon)

PHOTOGRAPHS (AND 3D VISUALISATIONS?)

flickr

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Explore

Upload

Explore / Tags / **pleiades:*=638753**

Slideshow 

Sort by:

Most recent • [Most interesting](#)

Related tags:

[pleiades:depicts=](#),
[pleiades:findspot=](#),
[pleiades:place=](#),
[pleiades:origin=](#),
[pleiades:where=](#),
[pleiades:places=](#),
[pleiades:atteststo=](#),
[pleiades:observedat=](#),
[pleiades:depcits=](#),
[pleiades:finspot=](#)



From [Chris Ruggles](#)



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From [Chris Ruggles](#)



From [Chris Ruggles](#)

[HTTP://WWW.FLICKR.COM/PHOTOS/TAGS/PLEIADES:*=638753](http://www.flickr.com/photos/tags/pleiades:*=638753)

HOW CERTAIN YOU ARE ABOUT YOUR CERTAINTY?

(AND DOES IT REALLY MATTER?)



Image from Bigstock

DOCUMENTING THROUGH THE ONTOLOGY: FIRST RESULTS

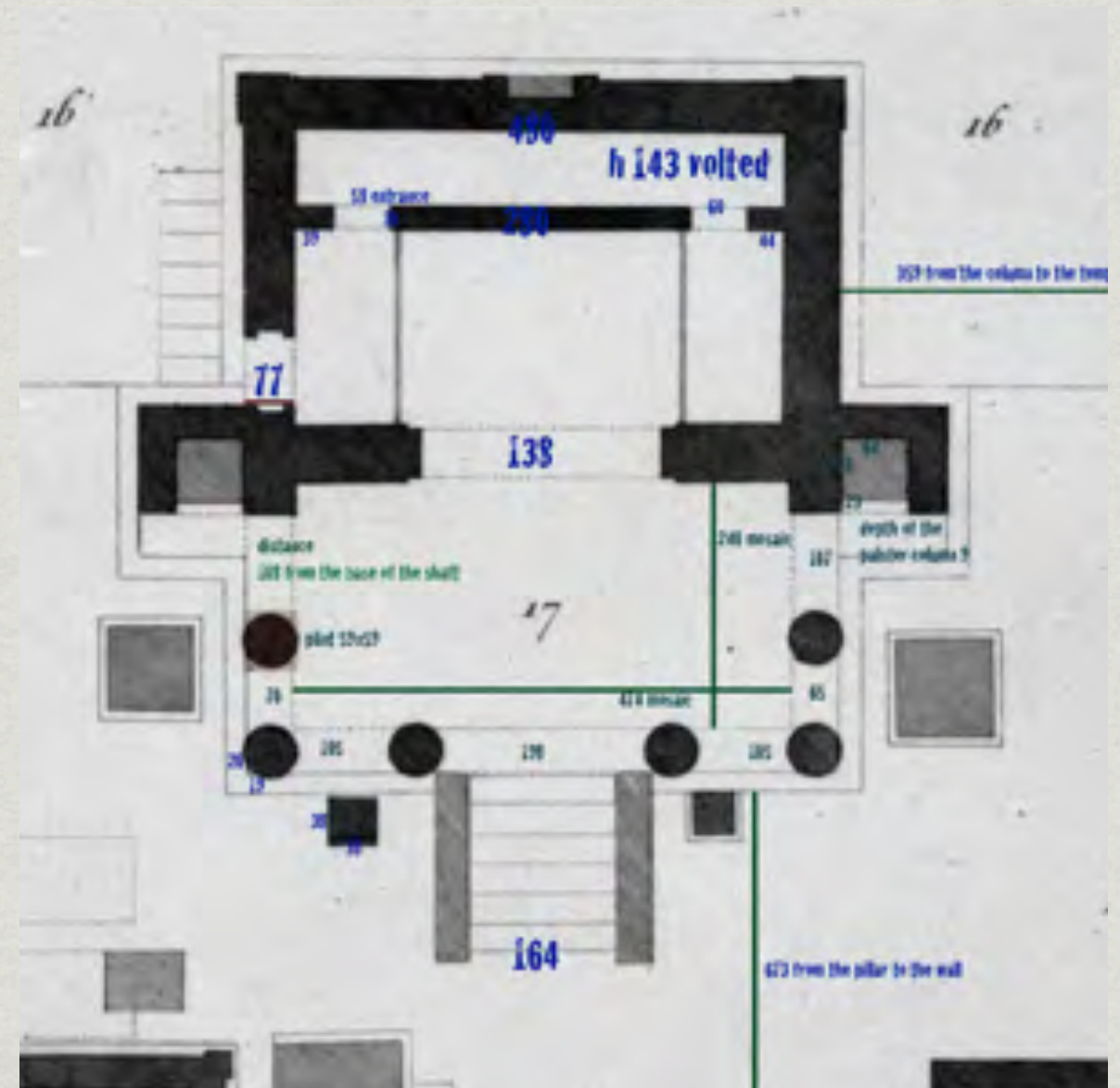
SOURCETYPE: ALPHA

The material referent of the digital element still exists, and its dimensions and/or position are available as measurements

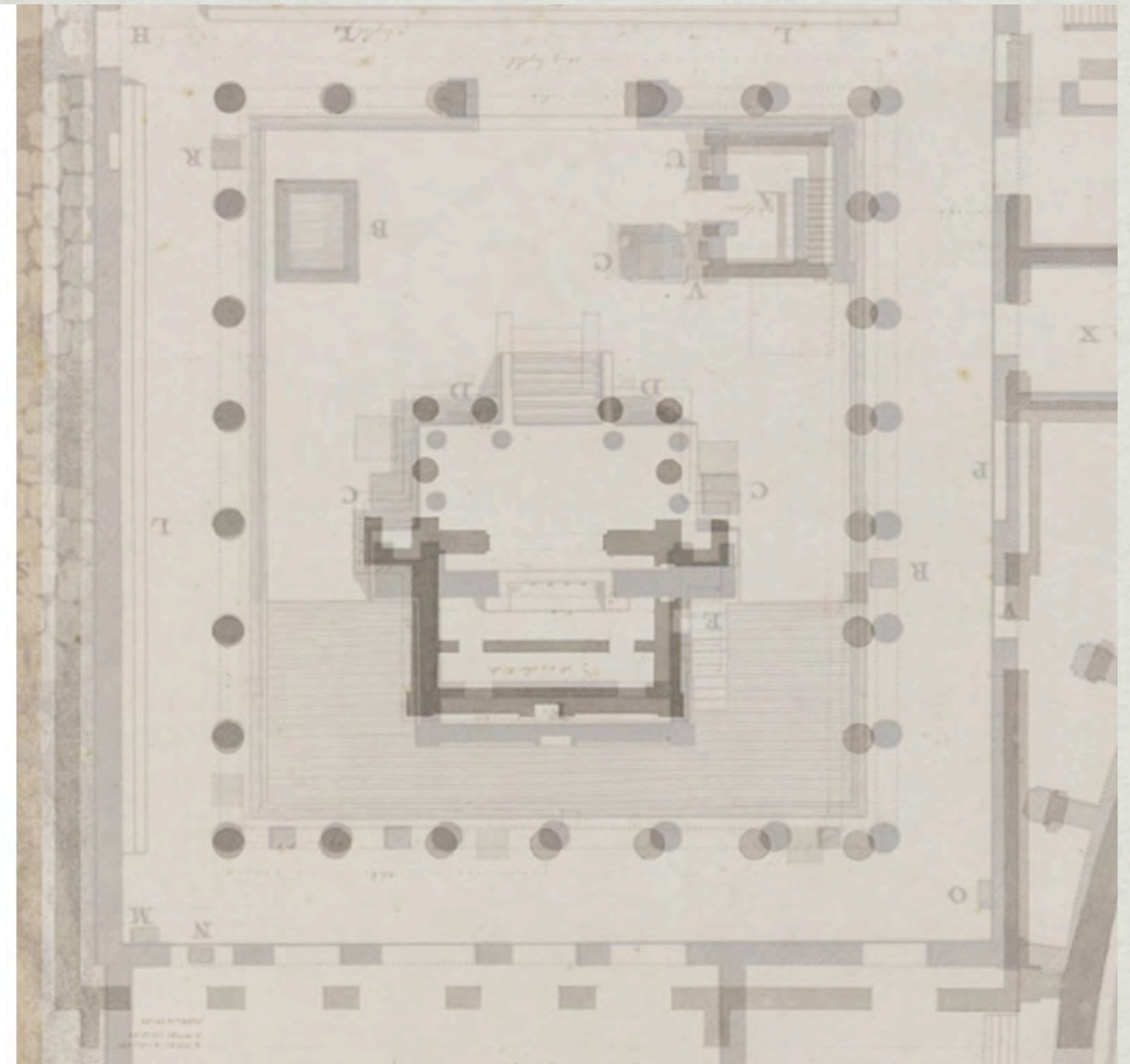
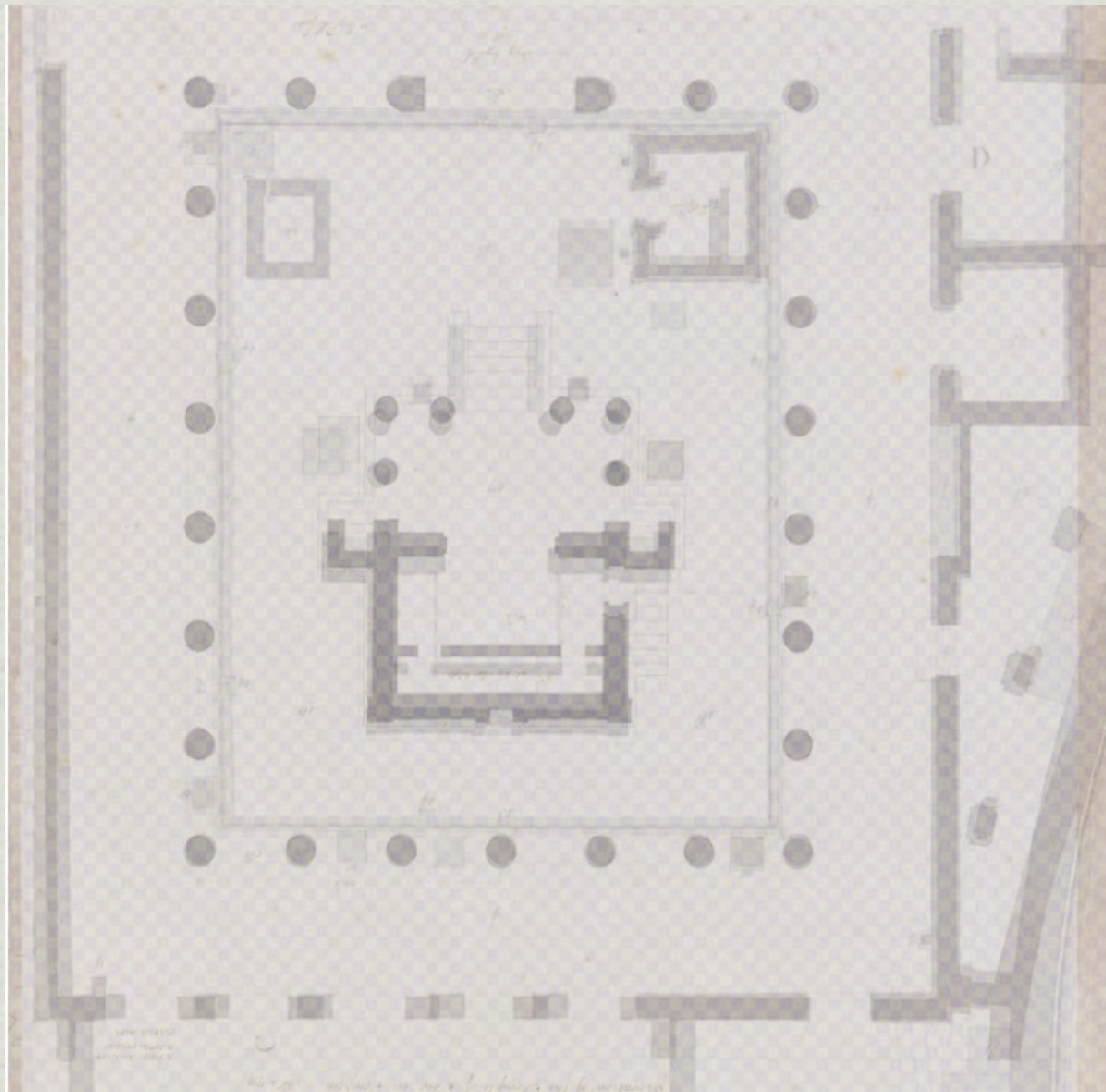
hasEvidence



Pompeii - Temple d'Isis, (Mes compagnons de voyage)



SUPERIMPOSITION OF THREE PLANS OF THE ISEUM IN POMPEII: SAINT-NON, PIRANESI, SOANE





SOURCETYPE: BETA

The material referent does not exist anymore or has been subsequently modified, but it has been documented in the past and the documentation is still available

hasReference



DEPREZ, Louis Jean, Temple of Isis with Protective Covering at Pompeii, undated, black ink, grey wash and watercolour, National Museum, Stockholm.

PIRANESI, View of the Temple of Isis, which today exists among the remains of the ancient city of Pompeii
<http://www.wikipaintings.org/en/giovanni-battista-piranesi/view-of-the-temple-of-isis-which-today-exists-among-the-remains-of-the-ancient-city-of-pompeii>

SOURCETYPE: GAMMA

The material referent does not exist anymore but information can be derived from material clues

isDerivedFrom



SOURCETYPE: DELTA

The material referent does not exist anymore and it has not been documented, but it can be visualised according to well accepted standards, precedents or previous scholarship.

SUB-TYPE: SIMILARITY

the triple will then point at the object(s), either still existing or survived in documentation, that are suggested to be a relevant precedent. They will be identified through name, spatial coordinates, historical and contemporary documentation or museums' catalogues.

isBasedOn

hasEvidence

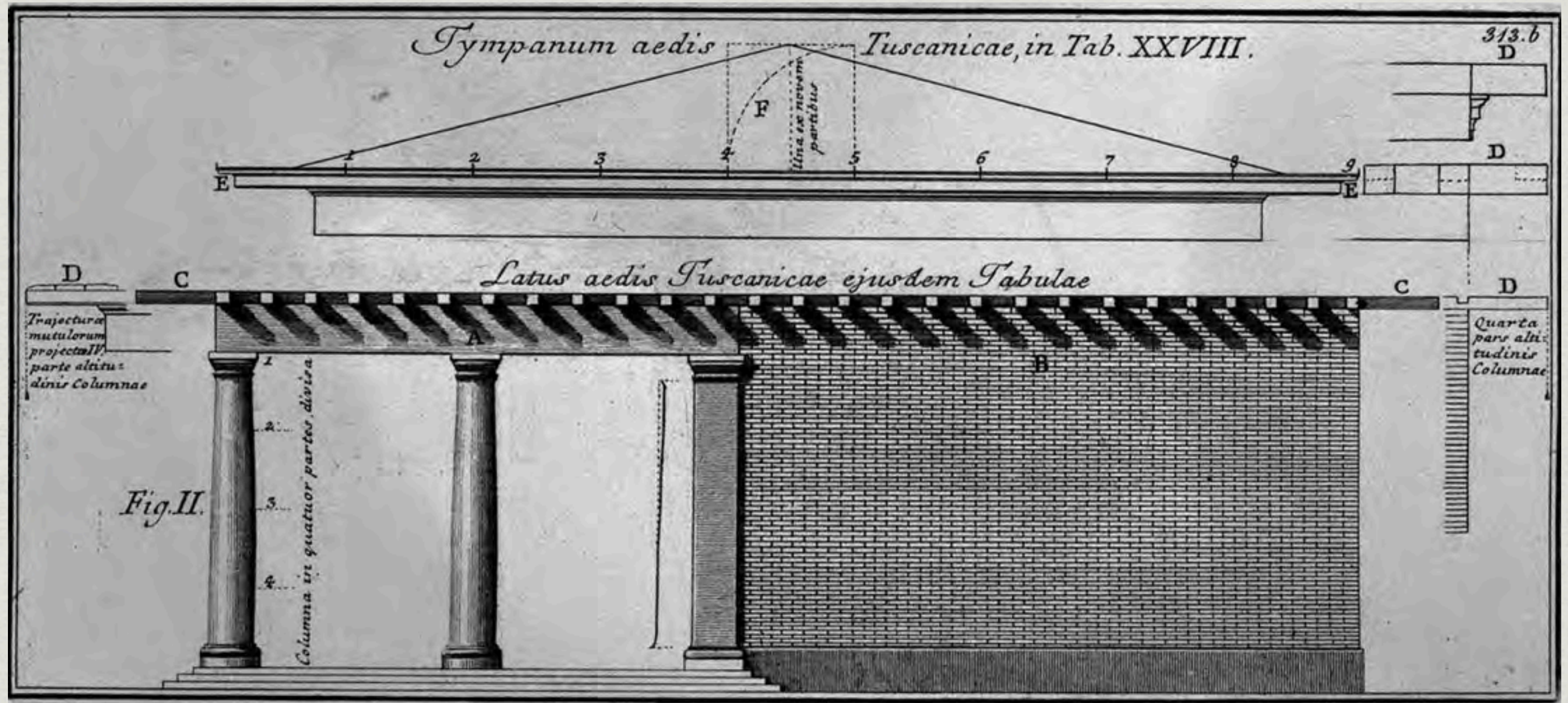
hasReference



SUB-TYPE: CANON

The triple will point at a bibliographical reference, and to its digital copy if available.

hasReference

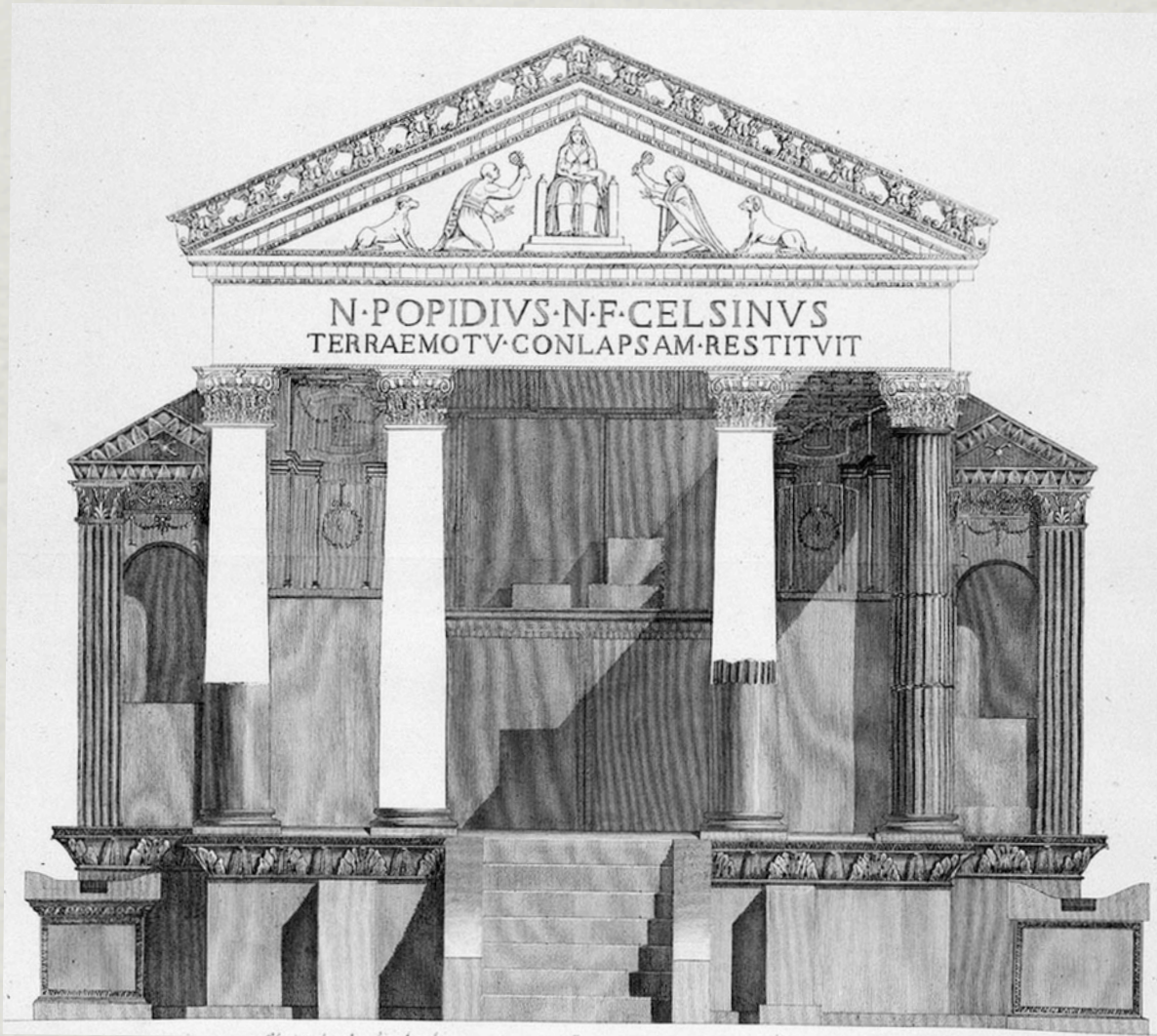


Francesco Piranesi's illustration for the Books of Architecture by Vitruvius

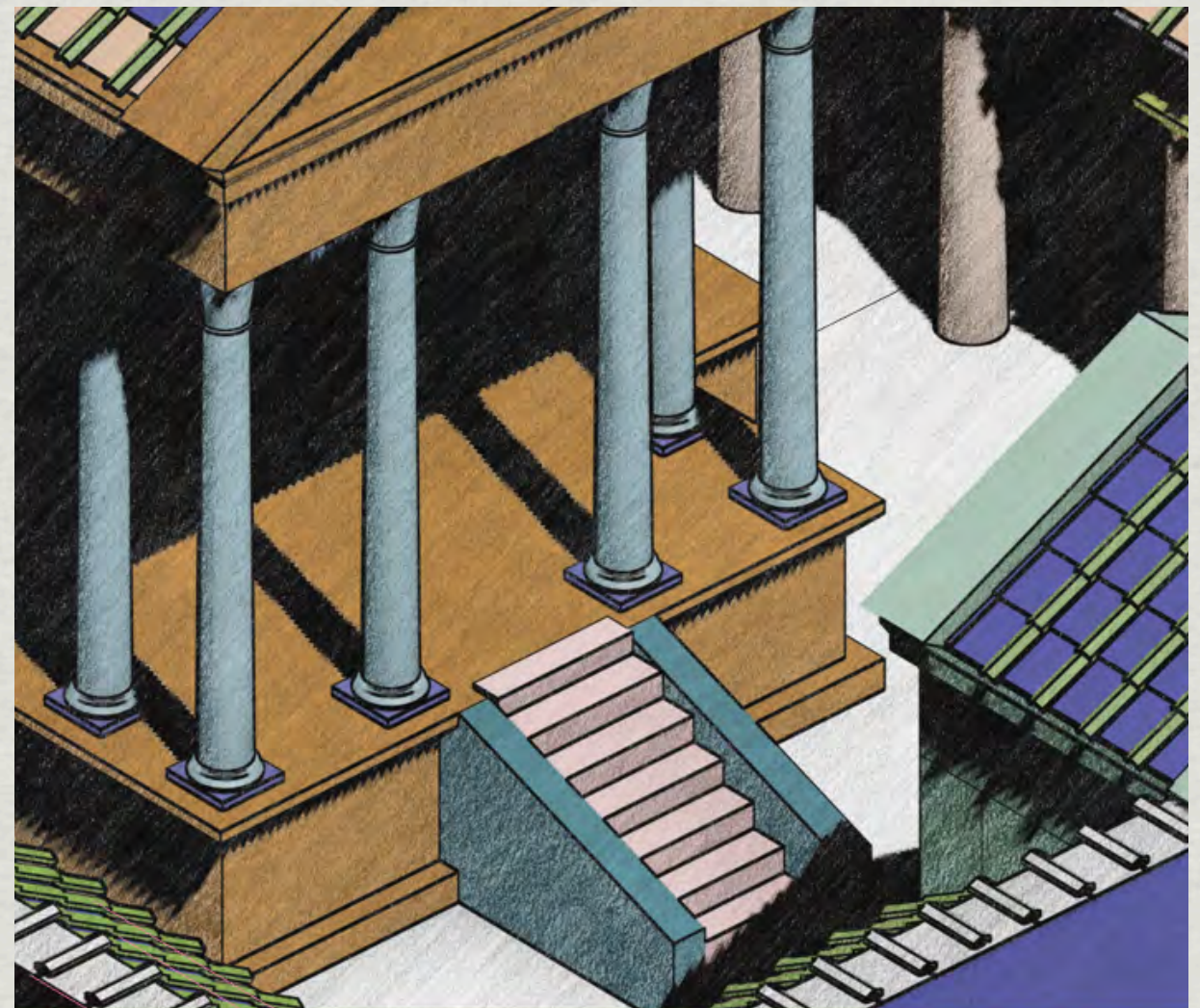
SUB-TYPE: SCHOLARSHIP

The triple will point at a bibliographical reference, and to its digital copy if available.

hasReference



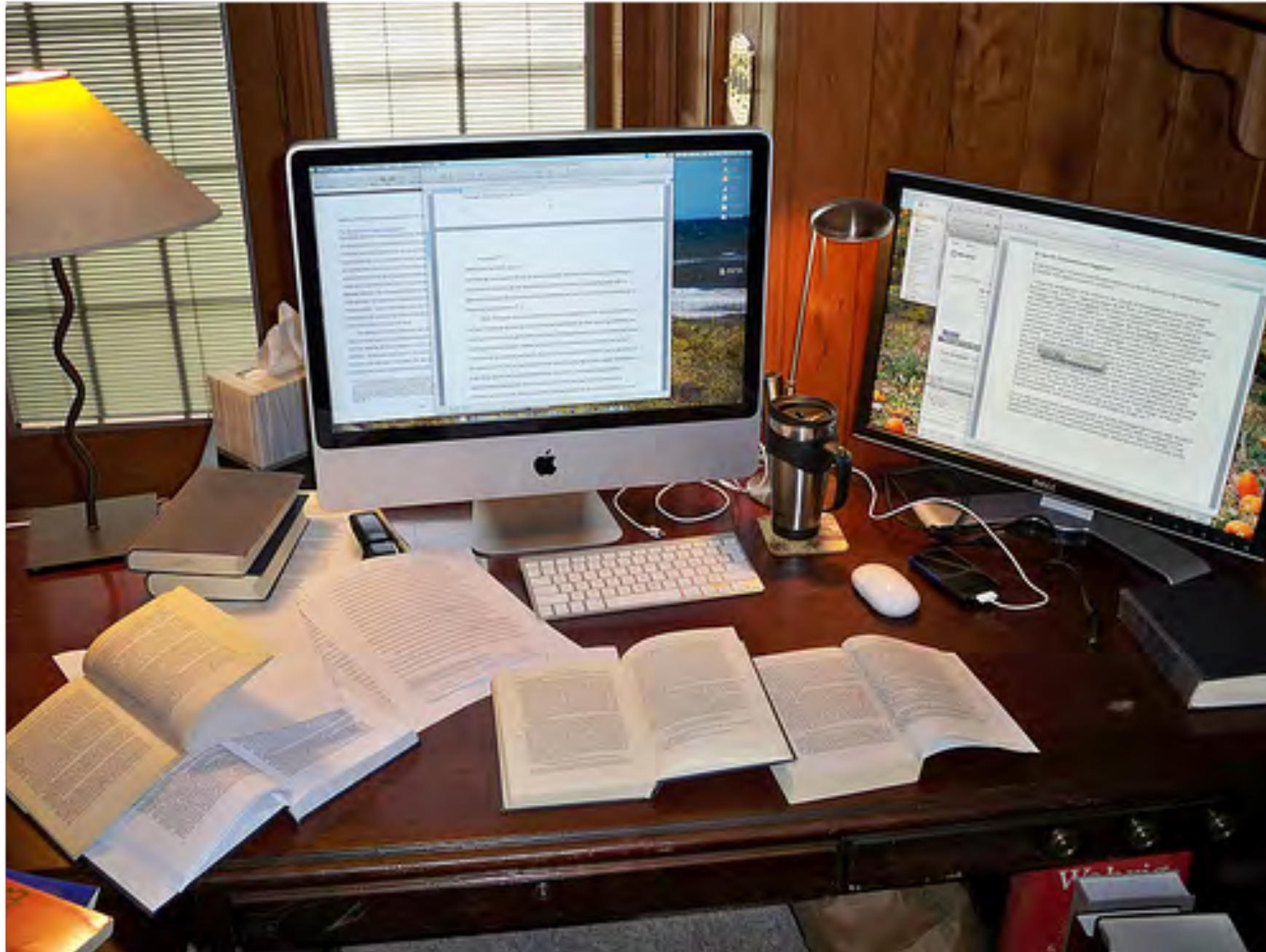
Francesco Piranesi, elevation for the Temple of Isis in Pompeii



SOURCETYPE: EPSILON

The material referent does not exist anymore, but it can be visualised according to the researcher's experience, knowledge, or intuition.

hasAuthor



<http://cgreen2.com/moodle/pluginfile.php/15/course/overviewfiles/research2.jpg>

SOURCETYPE: ZETA

The digital element has been added for contextualisation and communication purposes

SOURCETYPE: ETA

The element has not been created for scholarly purpose and does not aim to historical accuracy. However, some characteristics of an historical referent can still be recognised



SOURCES ARE FRAGMENTARY



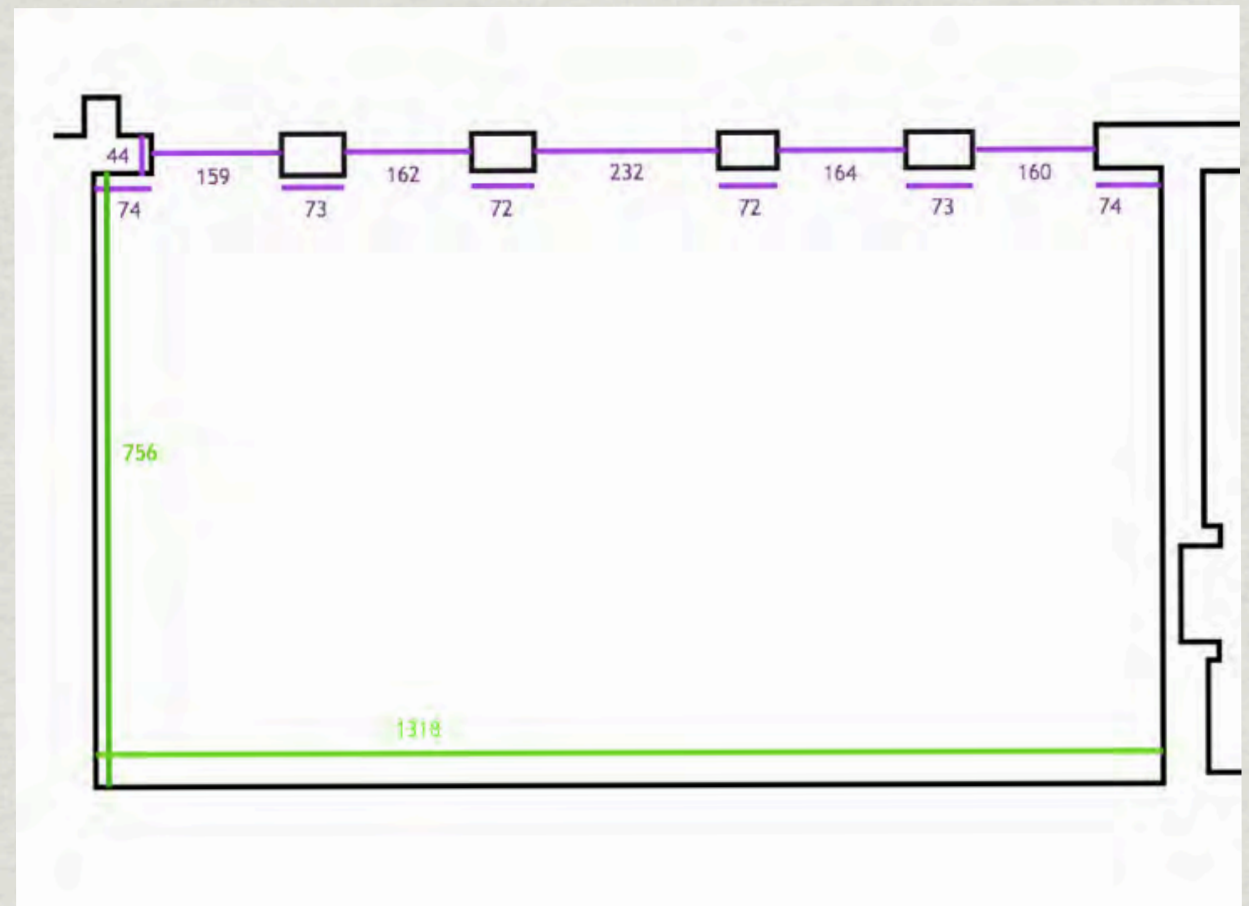
North wall of the ekklesiasterion:
three different
sources for the
same element



hasHeight

hasWidth

hasDepth



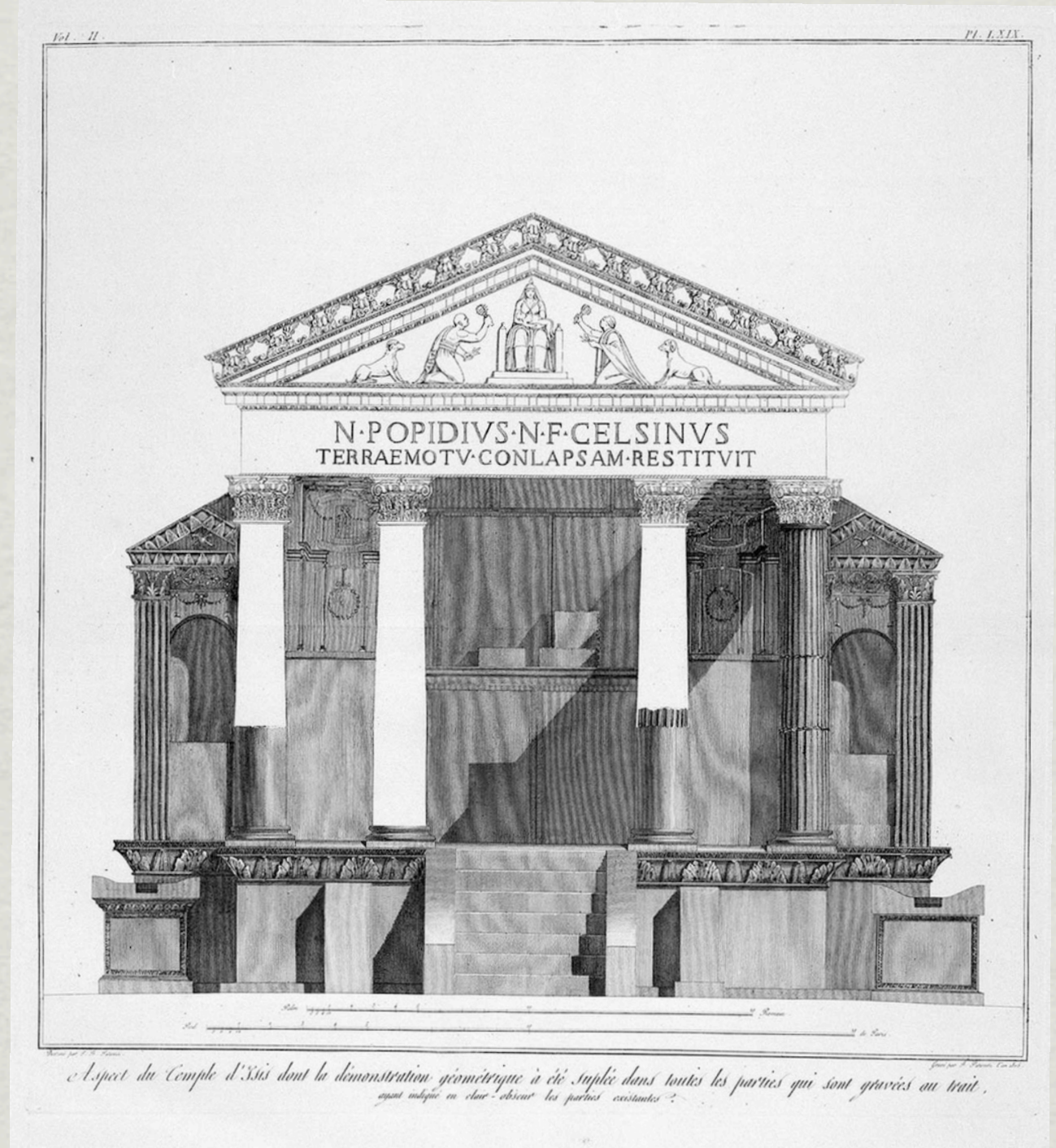
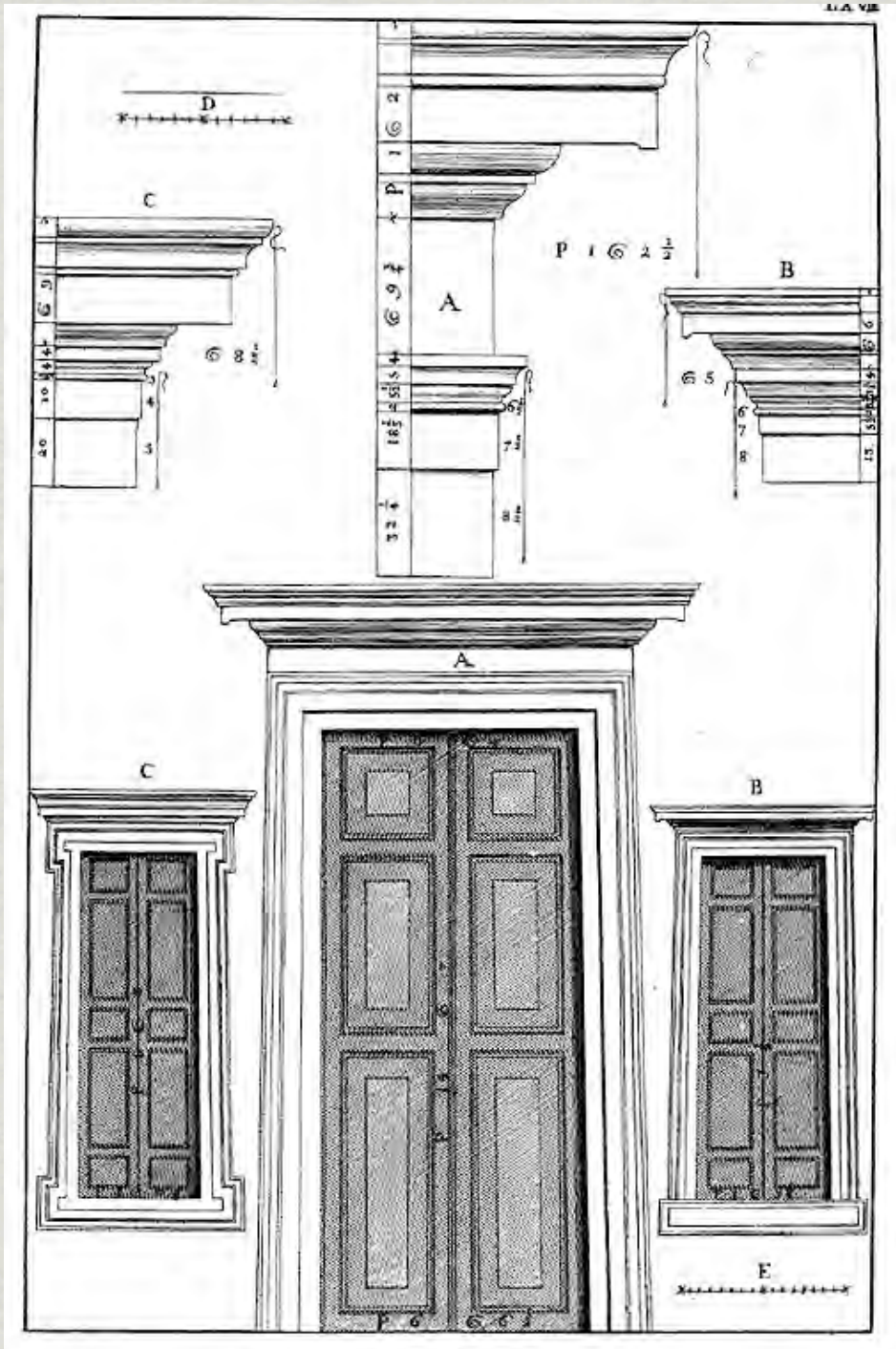
Photos from pompeiiinpictures.com

SOURCES ARE MULTIPLE

The height of the main door of the temple

hasReference

isSupportedBy

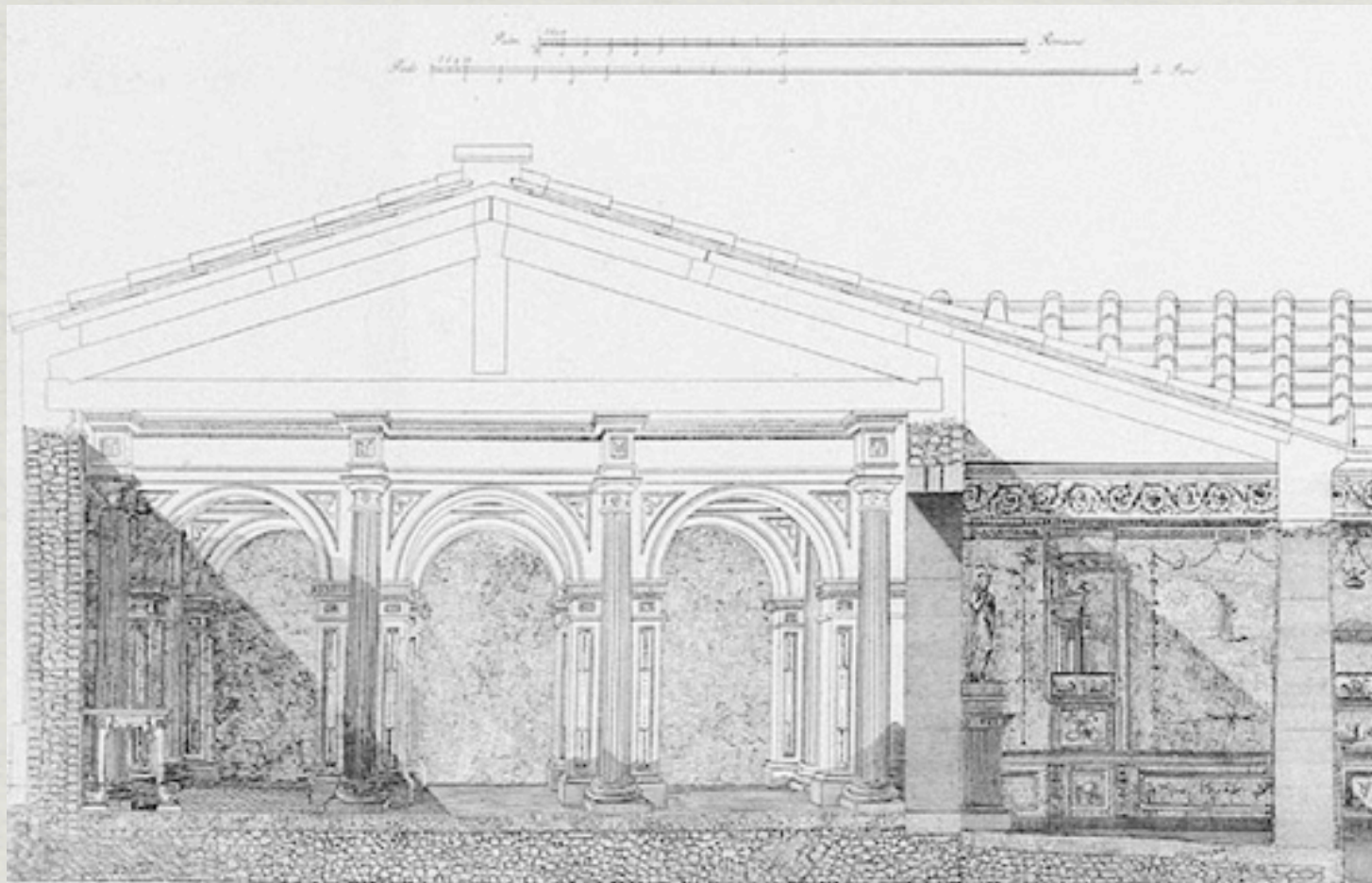


SOURCES ARE INCONSISTENT

The roof of the ekklesiasterion

hasReference

isNotSupportedBy



Francesco Piranesi's rear elevation and transection for the Temple of Isis in Pompeii. Table du second Volume des antiquités de Pompeia.

Author's picture of the scale model of the Iseum exhibited at the Archaeological Museum of Naples

SOURCES ARE HIDDEN

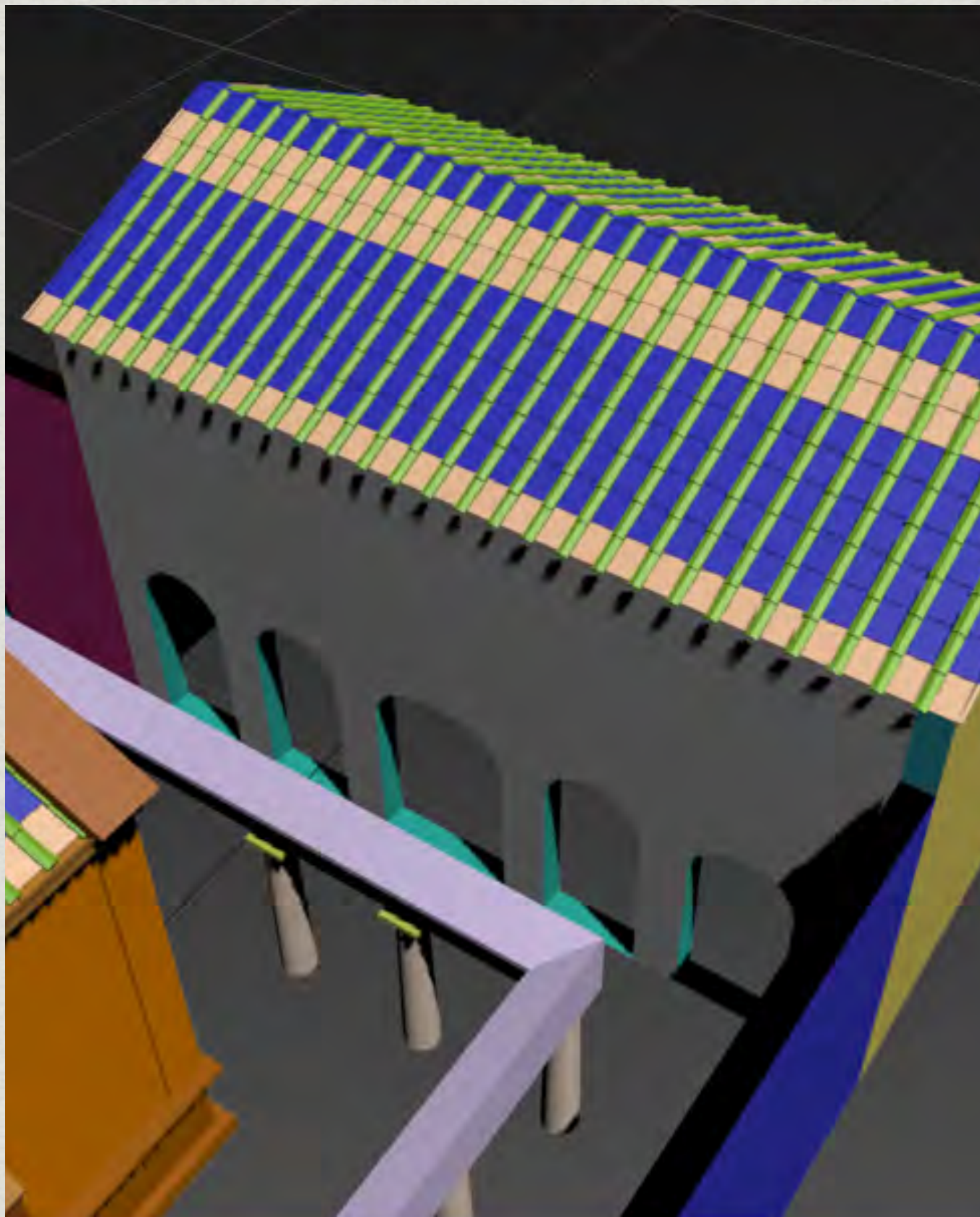
Common simplifications that often go undocumented.
Elements of a series: the colonnade

isDerivedFrom



Photos from pompeiiinpictures.com

Elements of a series: the arches of the ekklesiasterion's entrance



isNormalised



hasWidth: 162
isNormalised: average of 4 (159/164)
hasVariation: 3%

LINKING ARTEFACTS

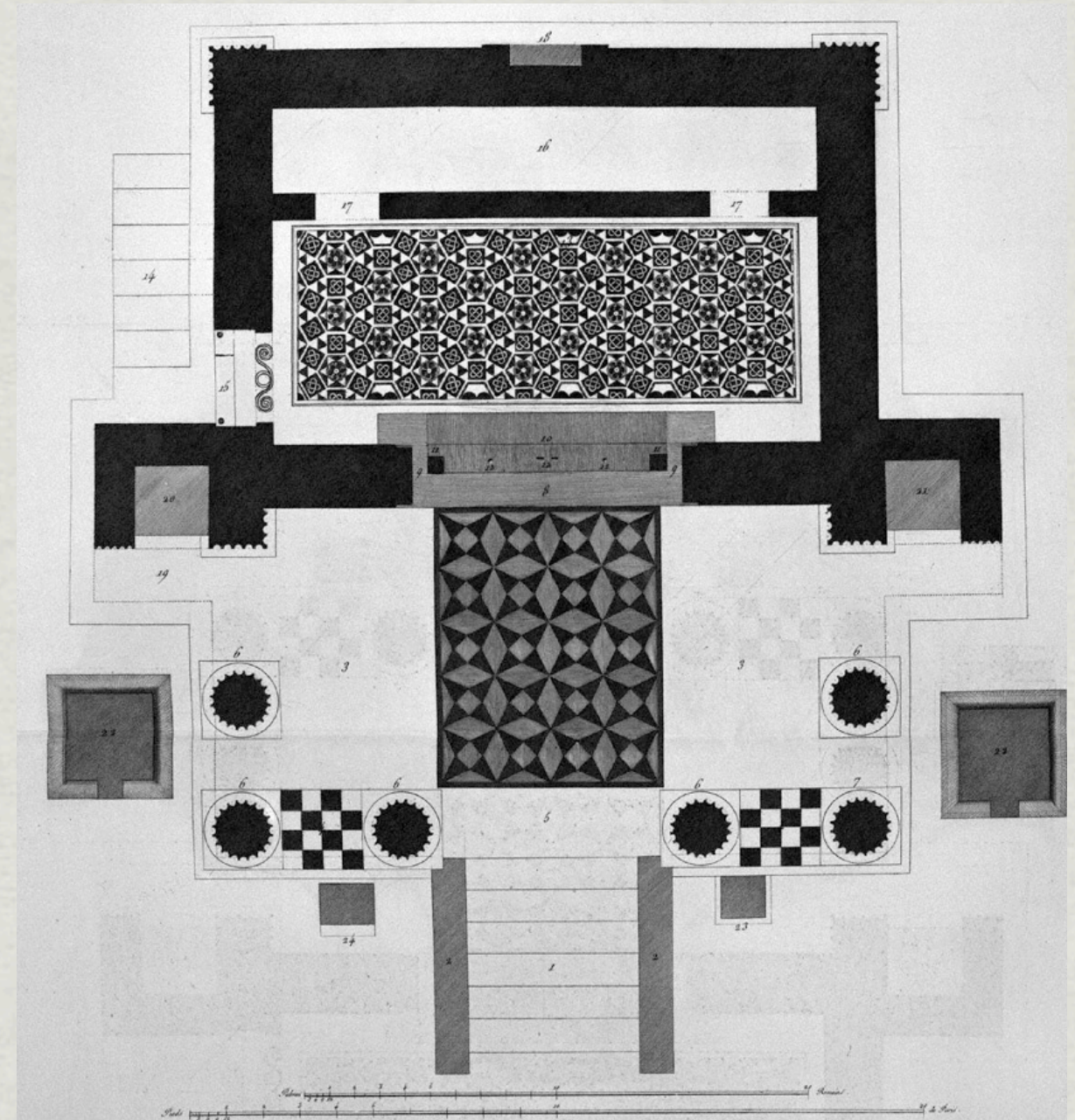
A simple, multiauthored digital unification



Photo from pompeiiinpictures.com

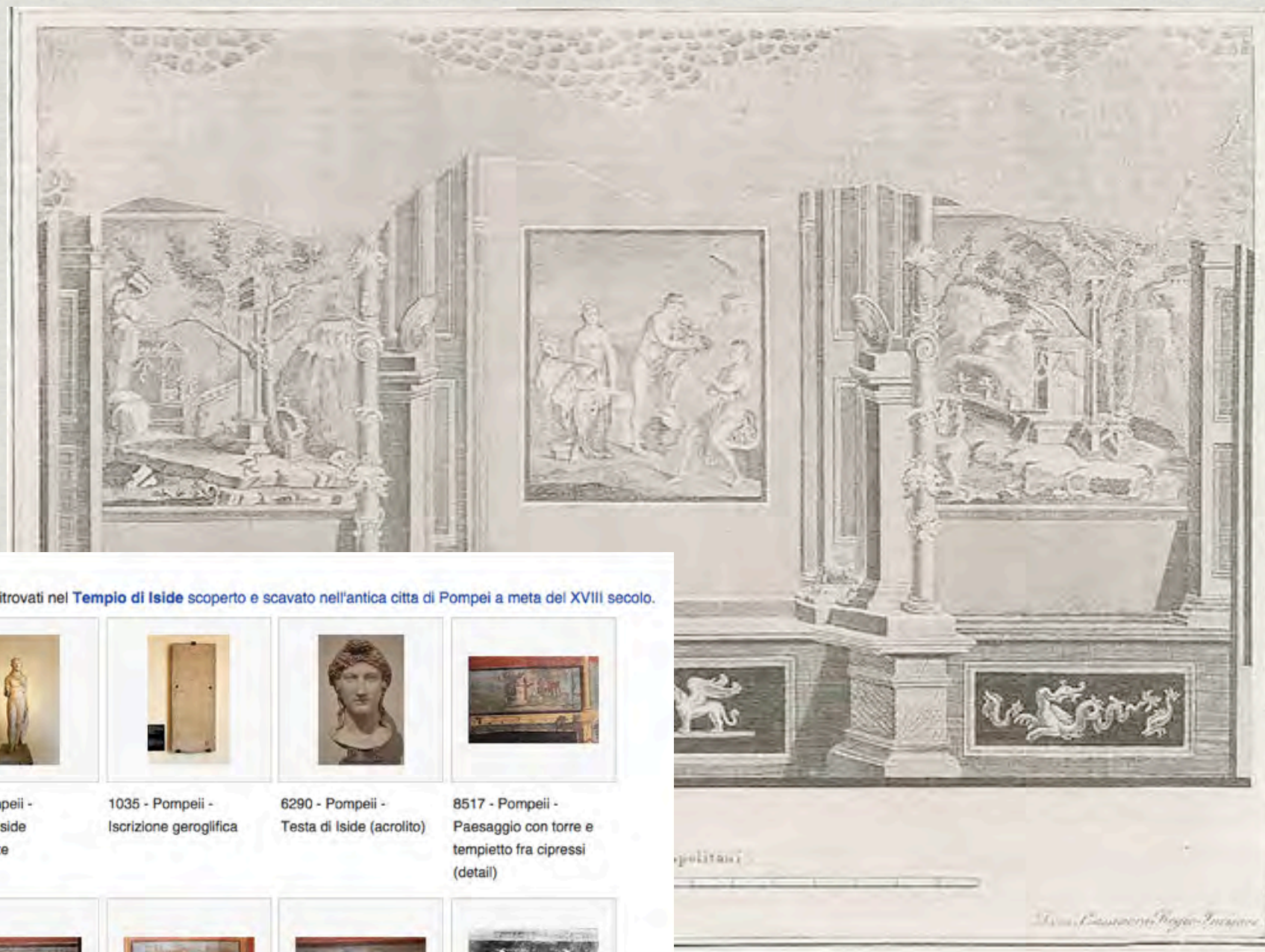
hasFeature

hadFeature



hasLocation

hadLocation



Temple of Isis (Catalogue) [\[edit\]](#)

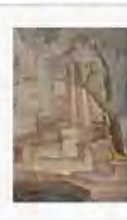
Italiano: In una sezione del Museo Archeologico sono raccolti gli affreschi e gli oggetti ritrovati nel **Tempio di Iside** scoperto e scavato nell'antica città di Pompei a metà del XVIII secolo.



S.N. - Pompeii -
Icneumone affronta
cobra



S.N.? - Pompeii - (a)
Piattaforma con tholos,
statue, alberelli



S.N.? - Pompeii - (b)
Piattaforma con tholos,
statue, alberelli (detail)



976 - Pompeii -
Statua di Iside
grecizzante



1035 - Pompeii -
Iscrizione geroglifica



6290 - Pompeii -
Testa di Iside (acrolito)



8517 - Pompeii -
Paesaggio con torre e
tempietto fra cipressi
(detail)



8518 - Pompeii -
Paesaggio con
monumenti funerari e
tempietti (detail)



8519 - Pompeii - (a)
Naumachia con porticati
marittimi e edicola a sx



8519 - Pompeii - (b)
Naumachia con porticati
marittimi e edicola a sx
(detail)



8520 - Pompeii -
Torre con portico e
cipressi



8527 - Pompeii - (a)
Triremi, edifici con ponte



8527 - Pompeii - (b)
Triremi, ponte (detail)



8527 - Pompeii - (c)
cespo di acanto (detail)



8528 - Pompeii -



8529 - Pompeii - (a)



8529 - Pompeii - (b)



8529 - Pompeii - (c)



8537 - Pompeii - (a)



8537 - Pompeii - (b)

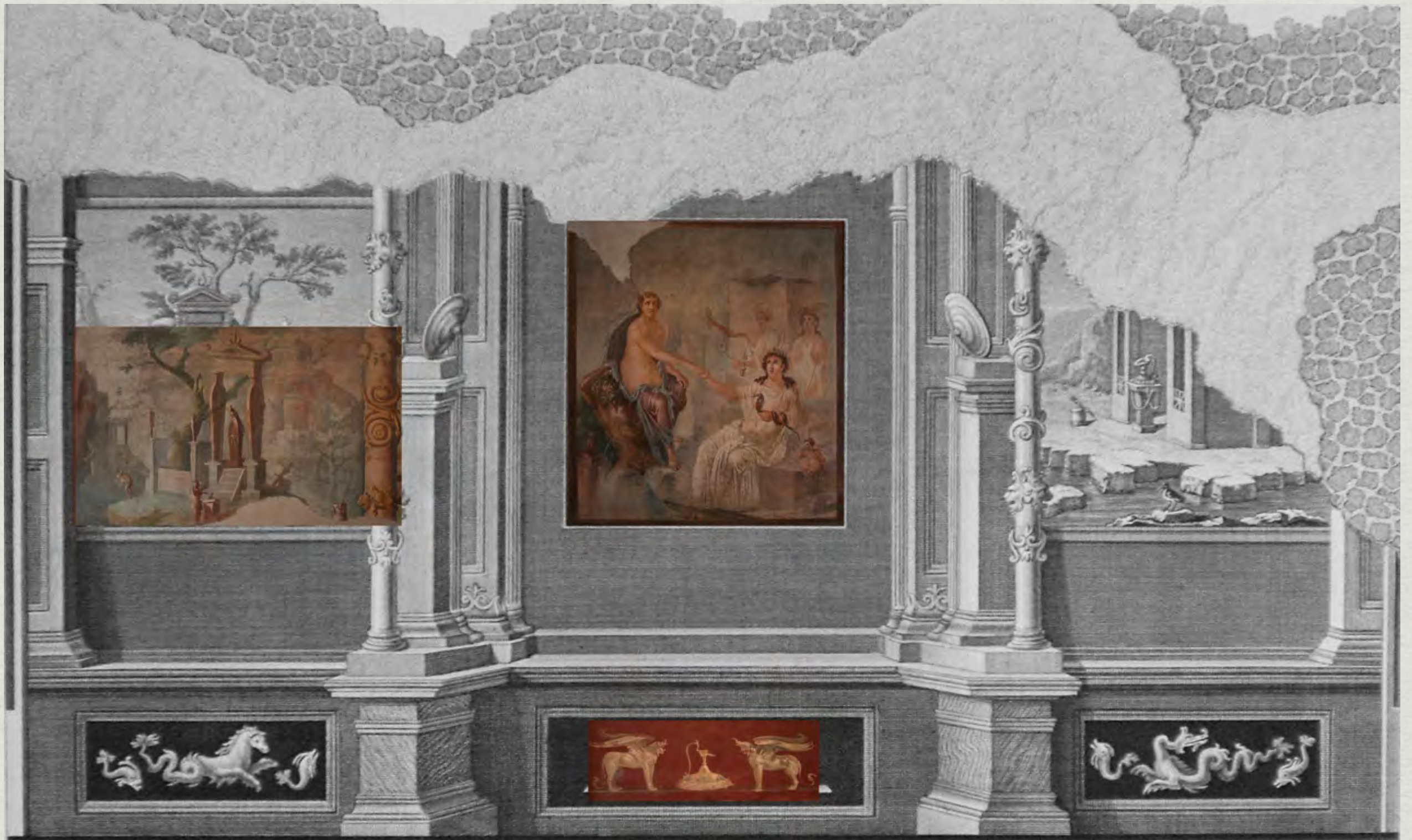


8539 - Pompeii - (a)

hasPosition

hadPosition

isDiscussedIn



Author's photographs of extant frescoes superimposed upon Chiantarelli's drawing of south wall

AN ONTOLOGY FOR 3D VISUALISATION WOULD:

- ✱ constrain the documentation, creating a standard,
- ✱ speed up the recording process thus reducing time/cost and making the documentation more likely to be retained in a project,
- ✱ allow and encourage comparison of different visualisations and interpretations of ancient heritage,
- ✱ contribute to transform 3D visualisation from univocal display of traditional research to a collaborative virtual environment that can be shared and implemented by different scholars,
- ✱ allow citations and re-use of the visualisation of entire buildings or single elements and peer-review,
- ✱ make 3D visualisations (human- and machine-) searchable, connecting them with the literary and historical sources

THANK YOU FOR YOUR ATTENTION



valeria.vitale@kcl.ac.uk

twitter: @nottinauta

blog: kosmopoietes.blogspot.co.uk